



Read and Load Data
Read Data

INTRODUCTION

EnSight supports a number of file formats common in computational analysis. In addition, CEI has defined a generic data format (in both ASCII and binary versions) that can be used for both structured and unstructured data. In many cases analysis codes output this data directly (i.e. FLUENT, STAR-CD, KIVA, etc.)

Reading data into EnSight is a two-step process. First, the appropriate files are selected. This step is largely the same regardless of the format of the data being read. Second, parts are constructed using an interface that is specific to the applicable data format. This article covers the first step. The second step is treated in the How To article for the applicable data format.

BASIC OPERATION

Various data formats require a different set of files for proper data loading. The EnSight6 and EnSight Gold formats require a single file (the casefile) to be provided in EnSight's Data Reader dialog. This casefile provides time and other information as well as names and descriptions of geometry and variable files needed to represent the dataset (see [EnSight Gold Case File Format](#)). Another example is the EnSight5 format, which requires two files: a *geometry* file that specifies coordinates and elements and a *results* file that provides additional information about the dataset (such as time information) as well as pointers to the files actually containing the variable data (see [EnSight5 Result File Format](#)). See also the [Other Notes](#) section below for a table describing the supported formats and required files. To select data files for reading into EnSight:

1. Select File > Data (Reader)...

2. Select the desired data directory using the Directories list.

You can also enter a directory name directly in the Filter field to jump to that directory. The Filter can also provide file name filtering, e.g. using *.geo to display in the Files list only those files that end with .geo.

3. Select the desired format.

4. If desired, specify a starting time (default is the last time step).

5. Select the desired case file in the Files list.

6. If the file is binary, set the correct byte order.

For some formats, EnSight can determine this automatically, and your selection is ignored. But if it can't determine, it will use this selection.

7. Click the (Set) Case button to select that case file.

The selected case file is inserted into the text field beside the (Set) Case button.

If you have variable data (and your format requires it), perform steps 7 and 8:

8. Select the desired results file in the Files list.

9. Click the (Set) Result button to select that results file.

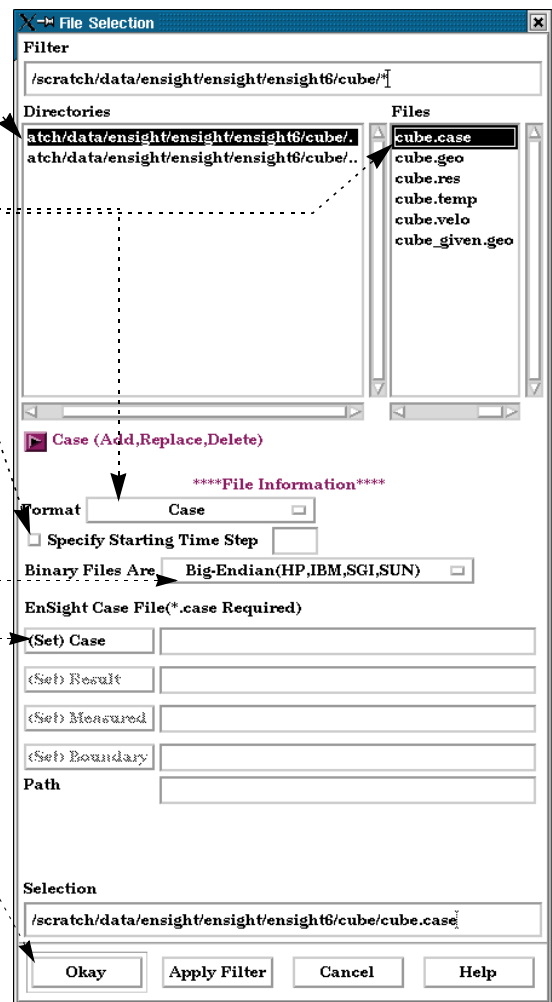
If you have measured data, perform steps 9 and 10:

10. Select the desired measured data file in the Files list.

11. Click the (Set) Measured button to select that measured data file.

12. Click Okay.

The Data Part Loader dialog for the applicable format will open. Proceed to the applicable How To article for that format (links are provided below).



OTHER NOTES

The following table details the files required for each file type.

Format Type	Description	Geometry File	Result File Required?
Case	A “wrapper” format for other formats (typically EnSight 6 and EnSight Gold format).	Yes: file.case	No
EnSight 5	CEI format defined for version 5.x of EnSight.	Yes: file.geo	Yes: Regular file.res
EnSight 6	CEI format defined for version 6.x of EnSight. Typically a superset of EnSight 5 format with support for structured data. (To troubleshoot, see How To Use ens_checker)	Yes: file.case	No
EnSight Gold	CEI format defined for version 7.x of EnSight. Loads into EnSight much quicker and is much more memory efficient. (To troubleshoot, see How To Use ens_checker)	Yes: file.case	No
ABAQUS	Data written from ABAQUS (commercial FEM solver).	Yes: file.fil. Will also read file.dat if present in the same directory with the same root file name.	No
ANSYS	Data written from ANSYS (commercial FEM solver).	Yes: file.rst (contains both geometry and results)	No
ESTET	Data written from ESTET (commercial CFD solver).	Yes: file	No
FAST	NASA FAST format for unstructured (tetrahedral) data.	Yes: file.geo	Yes: Special file.res. NOTE! Do not use your solution file (e.g. file.q) here. You must create a special results file to handle FAST variable files. See FAST UNSTRUCTURED Result file format .
PLOT3D	NASA format for multiblock, structured data.	Yes: file.x	If your solution (Q) file contains the five standard variables, you can use it as the results file (i.e. in the (Set) Result slot in the Data (Reader) dialog). If you have a non-standard Q file (or a function file) you must create a special results file to handle PLOT3D variable files. See PLOT3D Results File Format .
FIDAP NEUTRAL	Data written from FIDAP (commercial CFD solver) in the NEUTRAL format.	Yes: file.fdneut	No
FLUENT UNIVERSAL	Data written from Fluent (commercial CFD solver) in the UNIVERSAL format	Yes: file.unv	No
MOVIE.BYU	Data in MOVIE.BYU format.	Yes: file.geo	Yes: Regular file.res
MPGS	CEI format for EnSight prior to version 5.0	Yes: file.geo	Yes: Regular file.res
N3S	Data written from N3S (commercial CFD solver).	Yes: file.geo	Yes: N3S format file.res
User Defined	Any format for which a shared library data reader has been developed. Examples: CFX-4, CGNS, Exodus II, Nastran, STL, Silo, Flow-3D, Vectis, MSC/Dytran, LS-DYNA3D, TECPLOT, Cobalt60, Cobalt CASE, Radioss_4.x, SCRYU, HDF5	Yes	If required. It can vary with each reader.



SEE ALSO

[How To Read EnSight Gold Data](#)
[How To Read EnSight 5 Data](#)
[How To Read EnSight 6 Data](#)
[How To Read ABAQUS Data](#)
[How To Read ANSYS Data](#)
[How To Read ESTET Data](#)
[How To Read FAST Data](#)
[How To Read FLUENT Data](#)
[How To Read FIDAP NEUTRAL Data](#)
[How To Read MOVIE.BYU Data](#)
[How To Read MPGS Data](#)
[How To Read N3S Data](#)
[How To Read PLOT3D Data](#)
[How To Read User Defined](#)
[How To Use ens_checker](#)

User Manual:

[Reading and Loading Data Basics](#)
[EnSight Case Reader](#)
[EnSight5 Reader](#)
[ABAQUS Reader](#)
[ANSYS RESULTS Reader](#)
[ESTET Reader](#)
[FAST UNSTRUCTURED Reader](#)
[FIDAP NEUTRAL Reader](#)
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